

CUSTOMER NO.: 24498
Serial No.: 10/563,711
Office Action dated: 12/23/08
Response dated: 03/19/09

PATENT
PU030197

RECEIVED
CENTRAL FAX CENTER
MAR 19 2009

Listing and Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) A method for encoding a video signal in a video encoder with reduced noise, comprising the steps of:
 estimating motion for each macroblock in an input video signal to the video encoder N times (where N is an integer) to yield N sets of motion estimation decision sets, each set including a reference picture index and motion vector;
 creating, for each macroblock, a noise reduced macroblock using the N sets of motion estimation data; and
 encoding each noise reduced macroblock using a best one of the motion estimation data sets.

2. (Original) The method according to claim 1 wherein the step of estimating motion further includes the step estimating the motion N times using each of N different reference pictures.

3. (Original) The method according to claim 1 wherein the step of creating the noise reduced macroblock further comprises the steps of:
 selecting at least a plurality of the N sets of motion estimation decision sets;
 and
 temporally filtering each pixel in the macroblock to using the selected motion estimation decision sets.

4. (Original) The method according to claim 3 wherein the selecting step further comprises the steps of:
 generating a predictor for each motion estimation decision set;
 calculating a difference between the predictor and the current pixel;
 determining whether the difference is less than a threshold; and if so

CUSTOMER NO.: 24498
Serial No.: 10/563,711
Office Action dated: 12/23/08
Response dated: 03/19/09

PATENT
PU030197

RECEIVED
CENTRAL FAX CENTER
MAR 19 2009

selecting the motion estimation decision set whose difference is less than the threshold.

5. (Original) The method according to claim 1 further comprising the step of spatially filtering the input video prior to estimating motion.

6. (Currently amended) A method for encoding a video signal with reduced noise in a video encoder, comprising the steps of:

estimating motion for each macroblock in an input video signal to the video encoder N times (where N is an integer) using each of N separate reference pictures to yield N sets of motion estimation decision sets, each set including a reference picture index and motion vector;

creating, for each macroblock, a noise reduced macroblock using the N sets of motion estimation data; and

encoding each noise reduced macroblock using the best one of the motion estimation data

7. (Original) A video encoder, comprising:

a motion estimation stage for estimating the motion in each macroblock of an input video signal N times (where N is an integer) to yield N sets of motion estimation decision sets, each set including a reference picture index and motion vector,

a noise reducer for creating a noise reduced macroblock using the N sets of motion estimation data;

encoding means for encoding the noise reduced macroblock

8. (Original) The encoder according to claim 7 further including a reference picture store for storing coded pictures and where the motion estimation stage estimates the motion N times using each of N different stored reference pictures.

CUSTOMER NO.: 24498
Serial No.: 10/563,711
Office Action dated: 12/23/08
Response dated: 03/19/09

PATENT
PU030197

9. (Original) The encoder according to claim 7 further comprising:
a reference picture store for storing the coded pictures;
means for applying the stored previously coded pictures as input video stream
to for estimating the motion for each macroblock to yield the N sets of motion
estimation decision sets; while
means for applying the motion estimation decision sets to filter pictures for
noise reduction.

10. (Original) The encoder according to claim 7 further comprising a spatial
filter for spatially filtering the input video prior to performing motion estimation.